AMENDMENT TO THE CLAIMS

1. (currently amended) A payment processing gateway server for processing financial transactions comprising:

a public network interface configured to couple to a public network and receive first financial transaction authorization requests, the first financial transaction authorization requests received from merchants and include transaction specific data, merchant and or store related data which is related to a merchant generating the authorization request and a supplemental header, wherein the supplemental header includes a contract identification field which identifies a contract with a payment provider;

a gateway memory that includes a listing of valid contract identifications;

a gateway processor configured to process the first financial transaction authorization requests received through the public network interface based upon ~~supplemental header~~ a comparison of data in the contract identification field to the listing of valid contract identifications, wherein the gateway processor is further configured to reject the first financial transaction authorization requests based on a determination that the data in the contract identification field does not match a valid contract identification in the listing of valid contract identifications;

a financial network interface configured to couple to at least one financial network and transmit second financial transaction authorization requests to a financial institution coupled to the at least one financial network based upon the first financial transaction authorization requests, the financial network interface further configured to receive first financial transaction authorization results from the financial institution; and

the public network interface further configured to send second financial transaction authorization results to merchants in response to the first financial transaction authorization results~~;~~

~~wherein the supplemental header includes a contract identification field which identifies a contract with a payment provider~~.

2. (currently amended) The apparatus of claim 1 ~~including a memory containing a listing of valid contract identifications and wherein data in the contract identification field is compared with the contract identifications contained in the memory.~~ wherein configured to reject comprises the gateway processor configured to send a transaction response that includes a transaction header field and a response data field, wherein the transaction header field identifies a particular transaction.

3. (currently amended) The apparatus of claim ~~2~~ 1 wherein the gateway server sends a NACK message to a merchant through the public network interface if the data in the contract identification field does not match the valid contract identifications contained in memory.

4. (currently amended) The apparatus of claim ~~2~~ 1 wherein the gateway server sends an ACK message to a merchant through the public network interface if the data in the contract identification field matches a valid contract identification contained in memory.

5. (original) The apparatus of claim 1 wherein the contract identification field comprises two bytes of 8 data bits each.

6. (currently amended) The apparatus of claim 1 wherein the gateway ~~server includes a~~ memory ~~which~~ includes ~~contains~~ log data related to data carried in the contract identification field of supplemental headers received from a plurality of first financial transaction authorization requests.

7. (currently amended) The apparatus of claim 1 ~~including a~~ wherein the gateway memory ~~containing~~ includes a cache of merchant or store/location invariant data and wherein the financial transaction authorization requests include a cache-key field which identifies data in the cache.

8. (original) The apparatus of claim 7 wherein financial transaction authorization requests include a cacheable data field and wherein the gateway processor populates the cache contained in the memory with data received in the cacheable data field.

9. (original) The apparatus of claim 8 wherein the cache-key comprises a 128 bit data field.

10. (original) The apparatus of claim 1 wherein the gateway processor maintains an open socket connection with a financial institution throughout the financial network interface during processing of a financial transaction authorization request.

11. (original) The apparatus of claim 1 wherein the supplemental header includes a payment type field.

12. (original) The apparatus of claim 1 wherein the first financial transaction authorization requests are in accordance with an HTTPS standard.

13. (original) The apparatus of claim 1 wherein the first financial transaction authorization requests are in accordance with an XML standard.

14. (original) The apparatus of claim 1 wherein the first financial transaction authorization requests are transmitted through a secure socket layer.

15. (original) The apparatus of claim 1 wherein an ACK transmission through the public network interface by the gateway server to a merchant does not precede a transmission of an authorization result.

16. (original) The apparatus of claim 1 wherein the gateway processor processes financial transaction authorization requests using a stateless logic implementation and the gateway processor further synchronizes socket sessions with financial institutions through the financial network interface.

17. (currently amended) A payment processing gateway server for processing financial transactions comprising:

a public network interface configured to couple to a public network and receive first financial transaction authorization requests, the first financial transaction authorization requests received from merchants and include transaction specific data, merchant and/or related data which is related to a merchant generating the authorization request, ~~and~~ a supplemental header, and a cache-key field;

a gateway memory that includes a cache of merchant or store/location invariant data;

a gateway processor configured to retrieve the merchant or store/location invariant data based upon the cache-key field and configured to process first financial transaction authorization requests received through the public network interface based upon supplemental header;

a financial network interface configured to couple to at least one financial network and transmit second financial transaction authorization requests to a financial institution coupled to the at least one financial network based upon first financial transaction authorization requests, the financial network interface further configured to receive first financial transaction authorization results from the financial institution; and

the public network interface further configured to send second financial transaction authorization results to merchants in response to the first financial transaction authorization results;

wherein the supplemental header includes a payment type identification field which identifies a financial network coupled to the financial network interface for processing the first financial transaction authorization request.

18. (original) The apparatus of claim 17 wherein the payment type identification field identifies a transaction type, payment network and/or protocol.

19. (canceled)

20. (original) The apparatus of claim 17 wherein the payment type identification field describes a protocol format of the transaction specific data.

21. (original) The apparatus of claim 17 wherein the supplemental header further includes a contract identification field which identifies a contract with a payment provider.

22. (currently amended) The apparatus of claim 17 ~~including a memory containing a cache of~~ wherein the merchant or store/location invariant data ~~and wherein the financial transaction authorization requests include a cache key field which identifies data in the cache.~~ includes a merchant name, a location, a merchant category code, and an acquirer bin.

23. (currently amended) The apparatus of claim ~~22~~ 17 wherein the financial transaction authorization requests include a cacheable data field and wherein the gateway processor populates the cache contained in the memory with data received in the cacheable data field.

24. (original) The apparatus of claim 22 wherein the cache-key comprises a 128 bit data field.

25. (original) The apparatus of claim 17 wherein the gateway processor maintains an open socket connection with a financial institution through the financial network interface during processing of a financial transaction authorization request.

26. (original) The apparatus of claim 25 wherein the socket comprises an SSL connection.

27. (original) The apparatus of claim 17 wherein the gateway processor maintains an open socket connection with a merchant through the public network during processing of a financial transaction authorization request.

28. (original) The apparatus of claim 17 wherein the first financial transaction authorization requests are in accordance with an HTTPS standard.

29. (original) The apparatus of claim 17 wherein the first financial transaction authorization requests are in accordance with an XML standard.

30. (original) The apparatus of claim 17 wherein the first financial transaction authorization requests are transmitted through a secure socket layer.

31. (original) The apparatus of claim 17 wherein an ACK transmission through the public network interface by the gateway server to a merchant does not precede an transmission of an authorization result.

32. (original) The apparatus of claim 17 wherein the gateway processor processes financial transaction authorization requests using a stateless logic implementation and the gateway processor further synchronizes socket sessions with financial institutions through the financial network interface.

33. (currently amended) A payment processing gateway server for processing financial transactions comprising:

a public network interface configured to couple to a public network and receive first financial transaction authorization requests, the first financial transaction authorization requests received from merchants and which include transaction specific data, cache-able data and a cache key, wherein the cache key comprises data indicative of a merchant and data indicative of a store;

a gateway memory configured to cache the cache-able data from the first financial authorization requests and index the cache in accordance with the cache key;

a gateway processor configured to retrieve the cache-able data from the gateway memory based upon the cache key and configured to process the first financial transaction authorization requests received through the public network interface based upon a supplemental header;

a financial network interface configured to couple to at least one financial network and transmit second financial transaction authorization requests to a financial institution coupled to the at least one financial network based upon first financial transaction authorization requests, the financial network interface further configured to receive first financial transaction authorization results from the financial institution; and

the public network interface further configured to send second financial transaction authorization results to merchants in response to the first financial transaction authorization results~~; and~~

~~a memory configured to cache the cache-able data from the first financial authorization request and index the cache in accordance with the cache key~~.

34. (original) The apparatus of claim 33 wherein the cache key comprises 128 bits of data.

35. (original) The apparatus of claim 34 wherein the cache key comprises a GUID (Globally Unique Identifier).

36. (currently amended) The apparatus of claim 34 wherein the ~~cache key comprises 12 bytes of~~ data indicative of a merchant comprises 12 bytes and ~~4 bytes of~~ the data indicative of a store comprises 4 bytes.

37. (original) The apparatus of claim 33 wherein the cache-able data includes data selected from the group of data consisting of merchant name, country, state, location, zip code, merchant category and time zone.

38. (original) The apparatus of claim 33 wherein the gateway processor provides a web service on the public network interface.

39. (original) The apparatus of claim 38 wherein the web service maintains state for first financial transaction authorization requests.

40. (original) The apparatus of claim 33 wherein the gateway processor operates in accordance with a common language run time environment.

41. (original) The apparatus of claim 33 including a database to duplicate data maintained in the cache and thereby provide a data backup.

42. (original) The apparatus of claim 39 including a database configured to maintain the state.

43. (original) The apparatus of claim 39 including a plurality of gateway processors configured to form a web cluster.

44. (original) The apparatus of claim 43 including a director configured to direct first financial transaction authorization requests from a specific merchant to a specific gateway processor.

45. (original) The apparatus of claim 43 including a state server accessible by the web cluster configured to maintain state-related data.

46. (original) The apparatus of claim 33 wherein the gateway processor transmits a request message to merchants through the public network interface which requests a transmission of cache-able data for populating the cache contained in the memory.

47. (original) The apparatus of claim 33 wherein the financial transaction authorization request includes a supplemental header containing a contract identification field.

48. (original) The apparatus of claim 33 wherein the financial transaction authorization request includes a supplemental header containing a payment type identification field.

49. (original) The apparatus of claim 33 wherein the first financial transaction authorization requests are in accordance with an HTTPS standard.

50. (original) The apparatus of claim 33 wherein the first financial transaction authorization requests are in accordance with an XML standard.

51. (original) The apparatus of claim 33 wherein the first authorization requests are transmitted through a secure socket layer.

52. (original) The apparatus of claim 33 wherein the gateway processor processes financial transaction authorization requests using a stateless logic implementation and the gateway processor further synchronizes socket sessions with financial institutions through the financial network interface.

53-57. (canceled)

58. (original) A payment processing gateway server for processing debit type financial transactions comprising:

a public network interface configured to couple to a public network and receive first financial transaction authorization requests, the first financial transaction authorization requests received from merchants and include transaction specific data, and merchant and/or store related data which is related to a merchant generating the authorization request;

a gateway processor configured to process first financial transaction authorization requests received through the public network interface;

a financial network interface configured to couple to at least one financial network and transmit second financial transaction authorization requests to a financial institution coupled to the at least one financial network based upon first financial transaction authorization requests, the financial network interface further configured to receive first financial transaction authorization results from the financial institution;

the public network interface further configured to send second financial transaction authorization results to merchants in response to the first financial transaction authorization results; and

the financial network interface further configured to send an acknowledgement to the financial institution independently of receipt of an acknowledgement from the merchant in response to the second financial authorization results.

59. (original) The apparatus of claim 58 wherein the gateway processor is configured to recognize a duplicate financial transaction authorization request from the merchant within a time limit.

60. (original) The apparatus of claim 59 wherein the gateway processor transmits a message to the merchant in response to the duplicate message.

61. (original) The apparatus of claim 58 wherein the gateway processing sends an acknowledgement to the financial institution.

62. (currently amended) The apparatus of claim 58 wherein operation of the gateway processor on the financial transaction authorization requests is stateless and the gateway processor maintains a thread.

63. (new) A payment processing system comprising:

a payment processing gateway that has a memory and that transmits a request for a collection of merchant invariant data;

a point of sale device that receives the request for the collection of merchant invariant data and that transmits a first authorization request to the payment processing gateway, wherein the first authorization request includes the collection of merchant invariant data;

wherein the payment processing gateway stores the merchant invariant data in the memory;

wherein the point of sale device transmits a second authorization request to the payment processing gateway, wherein the second authorization request includes a cache key;

wherein the payment processing gateway retrieves the merchant invariant data from the memory utilizing the cache key; and

wherein the payment processing gateway selectively transmits a third authorization request and a fourth authorization request to a financial institution, wherein the third authorization request is based on the first authorization request and the fourth authorization request is based on the second authorization request.

64. (new) The payment processing system of claim 63 wherein the first authorization request and the second authorization request include supplemental headers and wherein selectively transmits comprises the payment processing gateway comparing the supplement headers to a list of valid values in the memory.

65. (new) The payment processing system of claim 64 wherein the point of sale device periodically transmits the collection of merchant invariant data based on a predetermined time.

66. (new) The payment processing system of claim 64 wherein the payment processing gateway comprises a plurality of servers and wherein a state service is maintained across the plurality of servers.

67. (new) The payment processing system of claim 66 wherein the payment processing gateway comprises a shared server that implements the state service.